RECORDATION FORM COVER SHEET
PATENTS ONLYAttorney Docket
No.: PHX-0038

To the Assistant Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Renyuan Gao
Donald S. Bitting
Robert M. Mininni
Robert A. Norwood
Kazuya Takayama

2. Name and address of receiving party(ies):

Photon-X, Inc.
291 Great Valley Parkway
Malvern, PA 19355

3. Nature of conveyance:

Assignment Merger
 Security Agreement Change of Name
 Other:

Execution Date: 7 November 2001

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: 31 October 2001

A. Patent Application No.(s):

B. Patent No.(s):

Additional numbers attached? Yes No

5. Name and address of party to whom correspondence document should be mailed:

Joseph E. Maenner, Esquire
Photon-X, Inc.
291 Great Valley Parkway
Malvern, PA 19355
Telephone: (610) 695-6553
Facsimile: (610) 240-9774
E-Mail: jem@photon-x.net

6. Total number of applications and patents involved: [1]

7. Total fee (37 CFR 3.41) Cal. 1 x \$40.00 = \$ 40.00

Enclosed
 Authorized to be charged to deposit account

8. Deposit account number:

DO NOT USE THIS SPACE

9. Statement and signature

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Joseph E. Maenner
Name of Person Signing

Signature

7 Nov 2001
Date

Total number of pages including cover sheet, attachments and document: [4]

RECEIVED
TECHNICAL CENTER 2800
SEP 25 2003
7 Nov 2001
Date

JOINT

A S S I G N M E N T

WHEREAS, we, **Renyuan GAO**, a citizen of the People's Republic of China, with a post office address of 413 Strafford Avenue, Wayne, Pennsylvania 19087, **Donald S. BITTING**, a citizen of the United States of America with a post office address of 37 Rim View Lane, Reading, Pennsylvania 19607, **Robert M. MININNI**, a citizen of the United States of America with a post office address of 20 Farmersville Road, Califon, New Jersey 07830, **Robert A. NORWOOD**, a citizen of the United States of America with a post office address of 114 Waterwillow Road, West Chester, Pennsylvania 19380, and **Kazuya TAKAYAMA**, a citizen of Japan, with a post office address of 606 Parkview Drive, Phoenixville, Pennsylvania 19460, hereinafter generally referred to as "ASSIGNORS", have invented a certain new and useful

Polymer Optical Waveguides on Polymer Substrates

for which we have executed a United States patent application, Application No. _____, filed _____, 20____, and

ASSIGNORS authorize ASSIGNEE or ASSIGNEE's representative to insert the Application Number and Filing date of this application if they are unknown at the time of execution of this Assignment.

WHEREAS, Photon-X, Inc., a Pennsylvania corporation having a place of business at 291 Great Valley Parkway, Malvern, PA 19355, hereinafter generally referred to as "ASSIGNEE", is desirous of acquiring said invention and said patent application.

NOW, THEREFORE, in consideration of the sum of One Dollar and other good and valuable executed consideration, the full receipt and sufficiency of all of which are hereby acknowledged, and intending to be legally bound hereby, we, the undersigned ASSIGNORS, hereby agree to sell, assign, transfer and convey and by these presents do sell, assign, transfer and convey unto the above-named ASSIGNEE, the whole and entire right, title and interest

in and to said invention as described in the above patent application, for the territory of the United States and its possessions and territories and all foreign countries;

in and to the above patent application and any and all related United States and foreign patent applications disclosing said invention, including provisionals, non-

provisionals, divisions and continuations thereof, along with all rights of priority created by said patent application under any treaty relating thereto; and

in and to all United States and foreign patents which may be granted on any and all of said patent applications, including extensions, reissues and reexamination certificates thereof;

said invention, application(s) and patent(s) to be held and enjoyed by the above-named ASSIGNEE, for ASSIGNEE's own use and benefit, and for ASSIGNEE's legal representatives and assigns to the full end of the term or terms for which said patent(s) may be granted, as fully and entirely as the same would have been held by the undersigned ASSIGNORS had this assignment and sale not been made; and for the aforesaid consideration ASSIGNORS hereby covenant, agree and undertake to execute, whenever requested by the above-named ASSIGNEE, all patent applications, assignments, lawful oaths and any other papers which ASSIGNEE may deem necessary or desirable for securing to ASSIGNEE or for maintaining for ASSIGNEE all the patent(s) hereby assigned or agreed to be assigned; all without further compensation to the undersigned ASSIGNORS.

Nov 6, 2001

(Date)

(Seal)

COMMONWEALTH OF PENNSYLVANIA :

: ss.

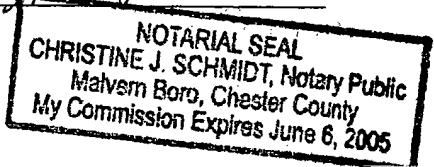
COUNTY OF CHESTER :

:

Before me, a notary public in and for the State and County aforesaid, on this 6th day of November, 2001, personally appeared **RENYUAN GAO**, who being to me personally known, and who having first executed the foregoing instrument in my presence and have been by me first duly sworn, did acknowledge the foregoing instrument as his free deed and act, signed, sealed and delivered by him for the purpose therein stated and intending to be legally bound thereby and intending that said instrument be recorded.

Notary Public

My Commission Expires:



11/7/01

(Date)

Donald S. Bitting

(Seal)

COMMONWEALTH OF PENNSYLVANIA

: ss.

COUNTY OF CHESTER

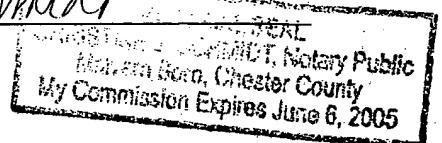
:

Before me, a notary public in and for the State and County aforesaid, on this 7th day of November, 2001, personally appeared **DONALD S. BITTING**, who being to me personally known, and who having first executed the foregoing instrument in my presence and have been by me first duly sworn, did acknowledge the foregoing instrument as his free deed and act, signed, sealed and delivered by him for the purpose therein stated and intending to be legally bound thereby and intending that said instrument be recorded.

Christine J. Schmidt

Notary Public

My Commission Expires



11-7-01

(Date)

Robert M. Mininni

(Seal)

COMMONWEALTH OF PENNSYLVANIA

: ss.

COUNTY OF CHESTER

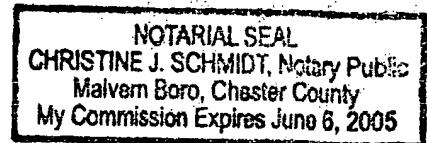
:

Before me, a notary public in and for the State and County aforesaid, on this 7th day of November, 2001, personally appeared **ROBERT M. MININNI**, who being to me personally known, and who having first executed the foregoing instrument in my presence and have been by me first duly sworn, did acknowledge the foregoing instrument as his free deed and act, signed, sealed and delivered by him for the purpose therein stated and intending to be legally bound thereby and intending that said instrument be recorded.

Christine J. Schmidt

Notary Public

My Commission Expires



7/7/01
(Date)

(Seal)

COMMONWEALTH OF PENNSYLVANIA :
: ss.
COUNTY OF CHESTER :

Before me, a notary public in and for the State and County aforesaid, on this 7th day of November, 2001, personally appeared **ROBERT A. NORWOOD**, who being to me personally known, and who having first executed the foregoing instrument in my presence and have been by me first duly sworn, did acknowledge the foregoing instrument as his free deed and act, signed, sealed and delivered by him for the purpose therein stated and intending to be legally bound thereby and intending that said instrument be recorded.

Notary Public

NOTARIAL SEAL
CHRISTINE J. SCHMIDT, Notary Public
Malvern Boro, Chester County
My Commission Expires June 6, 2005

My Commission Expires

11/07/01
(Date)

(Seal)

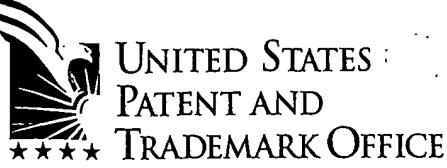
COMMONWEALTH OF PENNSYLVANIA :
: ss.
COUNTY OF CHESTER :

Before me, a notary public in and for the State and County aforesaid, on this 7th day of November, 2001, personally appeared **KAZUYA TAKAYAMA**, who being to me personally known, and who having first executed the foregoing instrument in my presence and have been by me first duly sworn, did acknowledge the foregoing instrument as his free deed and act, signed, sealed and delivered by him for the purpose therein stated and intending to be legally bound thereby and intending that said instrument be recorded.

Notary Public

My Commission Expires

NOTARIAL SEAL
CHRISTINE J. SCHMIDT, Notary Public
Malvern Boro, Chester County
My Commission Expires June 6, 2005



FEBRUARY 05, 2002

PTAS

PHOTON-X, INC.
JOSEPH E. MAENNER, ESQUIRE
291 GREAT VALLEY PARKWAY
MALVERN, PA 19355

Under Secretary of Commerce For Intellectual Property and
Director of the United States Patent and Trademark Office
Washington, DC 20231
www.uspto.gov

FEB 11 2002



101916561A

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 12/04/2001

REEL/FRAME: 012360/0642
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:
GAO, RENYUAN

DOC DATE: 10/10/2001

ASSIGNOR:
MAENNER, JOSEPH E.

DOC DATE: 10/10/2001

ASSIGNEE:
PHOTON-X, INC.
291 GREAT VALLEY PARKWAY
MALVERN, PENNSYLVANIA 19355

SERIAL NUMBER: 10004652
PATENT NUMBER:

FILING DATE:
ISSUE DATE:

MARY BENTON, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

12-17-2001

T

Attorney Docket
No.: PHX-00442/04/01
To the Assistant Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Renyuan GAO
Joseph E. MAENNER

2. Name and address of receiving party(ies):

Photon-X, Inc.
291 Great Valley Parkway
Malvern, PA 19355JC760 U.S. PTO
10/004652
12/04/01

3. Nature of conveyance:

Assignment Merger
 Security Agreement Change of Name
 Other:

Execution Date: 10 October 2001

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: 8 October 2001

A. Patent Application No.(s):

B. Patent No.(s):

Additional numbers attached? [] Yes No

5. Name and address of party to whom correspondence document should be mailed:

Joseph E. Maenner, Esquire
 Photon-X, Inc.
 291 Great Valley Parkway
 Malvern, PA 19355
 Telephone: (610) 695-6553
 Facsimile: (610) 240-9774
 E-Mail: jem@photon-x.net

6. Total number of applications and patents involved: 17. Total fee (37 CFR 3.41) Cal. 1 x \$40.00 = \$ 40.00

Enclosed
 Authorized to be charged to deposit account

8. Deposit account number:

DO NOT USE THIS SPACE

9. Statement and signature

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Joseph E. Maenner
 Name of Person Signing

Signature

Date

Total number of pages including cover sheet, attachments and document: [4]

OMB No. 0651-0011 (exp. 4/94)

12/14/2001 TDIAZ1 00000160 10004652

01 FC:581

40.00 DP

JOINT

A S S I G N M E N T

WHEREAS, we, **Renyuan GAO**, a citizen of the People's Republic of China, with a post office address of 413 Strafford Avenue, Apt 3C, Strafford, PA 19087, **Joseph E. MAENNER**, a citizen of the United States of America, with a post office address of 509 First Montgomery BLVD., Thorndale, Pennsylvania 19372, hereinafter generally referred to as "ASSIGNORS", have invented a certain new and useful

**Method of Fabricating Polymer Optical Channel Waveguides with
Multiple Types of Waveguide Core Materials**

for which we have executed a United States patent application, Application No. _____, filed _____, 20____, and

ASSIGNORS authorize **ASSIGNEE** or **ASSIGNEE**'s representative to insert the Application Number and Filing date of this application if they are unknown at the time of execution of this Assignment.

WHEREAS, **Photon-X, Inc.**, a Pennsylvania corporation having a place of business at 291 Great Valley Parkway, Malvern, PA 19355, hereinafter generally referred to as "ASSIGNEE", is desirous of acquiring said invention and said patent application.

NOW, THEREFORE, in consideration of the sum of One Dollar and other good and valuable executed consideration, the full receipt and sufficiency of all of which are hereby acknowledged, and intending to be legally bound hereby, we, the undersigned **ASSIGNORS**, hereby agree to sell, assign, transfer and convey and by these presents do sell, assign, transfer and convey unto the above-named **ASSIGNEE**, the whole and entire right, title and interest

in and to said invention as described in the above patent application, for the territory of the United States and its possessions and territories and all foreign countries;

in and to the above patent application and any and all related United States and foreign patent applications disclosing said invention, including provisionals, non-provisionals, divisions and continuations thereof, along with all rights of priority created by said patent application under any treaty relating thereto; and

in and to all United States and foreign patents which may be granted on any and all of said patent applications, including extensions, reissues and reexamination certificates thereof;

said invention, application(s) and patent(s) to be held and enjoyed by the above-named ASSIGNEE, for ASSIGNEE's own use and benefit, and for ASSIGNEE's legal representatives and assigns to the full end of the term or terms for which said patent(s) may be granted, as fully and entirely as the same would have been held by the undersigned ASSIGNORS had this assignment and sale not been made; and for the aforesaid consideration ASSIGNORS hereby covenant, agree and undertake to execute, whenever requested by the above-named ASSIGNEE, all patent applications, assignments, lawful oaths and any other papers which ASSIGNEE may deem necessary or desirable for securing to ASSIGNEE or for maintaining for ASSIGNEE all the patent(s) hereby assigned or agreed to be assigned; all without further compensation to the undersigned ASSIGNORS.

10/8/2001

(Date)

Renyan Gao

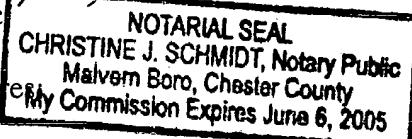
(Seal)

COMMONWEALTH OF PENNSYLVANIA :
: ss.
COUNTY OF CHESTER :

Before me, a notary public in and for the State and County aforesaid, on this 10th day of October, 2001, personally appeared **Renyan GAO**, who being to me personally known, and who having first executed the foregoing instrument in my presence and have been by me first duly sworn, did acknowledge the foregoing instrument as his free deed and act, signed, sealed and delivered by him for the purpose therein stated and intending to be legally bound thereby and intending that said instrument be recorded.

Christine J. Schmidt

Notary Public



My Commission Expires

8 Oct 2001
(Date)

J. E. M.

(Seal)

COMMONWEALTH OF PENNSYLVANIA

COUNTY OF CHESTER

: ss.

:

Before me, a notary public in and for the State and County aforesaid, on this 10th day of October, 2001, personally appeared **Joseph E. MAENNER**, who being to me personally known, and who having first executed the foregoing instrument in my presence and have been by me first duly sworn, did acknowledge the foregoing instrument as his free deed and act, signed, sealed and delivered by him for the purpose therein stated and intending to be legally bound thereby and intending that said instrument be recorded.

Christine J. Schmidt

Notary Public

My Commission Expires:

